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VOYAGING DOWN THE VOLGA

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The absolute dependence of the Volga countryside upon its river as the major means of transportation and communication is best appreciated after a leisurely four day trip downstream from Gorky, formerly Nizhni-Novgorod,* to Stalingrad. In that distance of 1,100 miles, not one railway line, not one airline, not one passable highway parallels the river; only four railroad bridges cross the waterway linking the east with the west (Fig. 1). Rowboats criss-cross the paths of the steamers, mail packets, barges, and rafts that ply up and down the river. The passengers with their packages, the cargoes on the passing boats, and the piles of goods on the river banks at the stations, present a never ending variety of color, culture, and confusion.

THE RIVER AND THE CITIES

The Volga originates in the forests, swamps, and lakes in the Valdai Hills, moraines that lie to the northwest of Moscow. As the river flows eastward it swings south, now north, back and forth. From Kazan, situated at about the half-way mark between the mouth and the source, the river takes a southerly direction emerging from the mixed forest region, then crossing the grain belt, the steppe, and finally the arid Caspian Depression, 85 feet below sea level, in order to reach the Caspian Sea.

From Gorky southward, the river swings between rocky gorges and then sweeps out across the lower flat lands with limestone cliffs or bluffs on but one bank. Then another gorge appears, beyond which the river again swings free across a flat far-reaching flood plain with low hills on one or the other of the banks. Such conditions necessitate landing stages that adjust to changing water

* Nizhni-Novgorod means Lower-New City since it is farther south than the original Novgorod just south of Leningrad.

levels and to the whims of the river. In Fig. 2, the floating dock is visible. In the larger cities, these landing stages are sizable boats chained to the river bank but in the villages a small boat may be anchored out somewhere in the deeper river channel, cut off from the mainland by inundated fields and groves of trees. The towns are usually up on the embankment beyond the flood area and are sometimes located a few kilometers away. If the latter be true, a small river town with booths and shops is set up after the

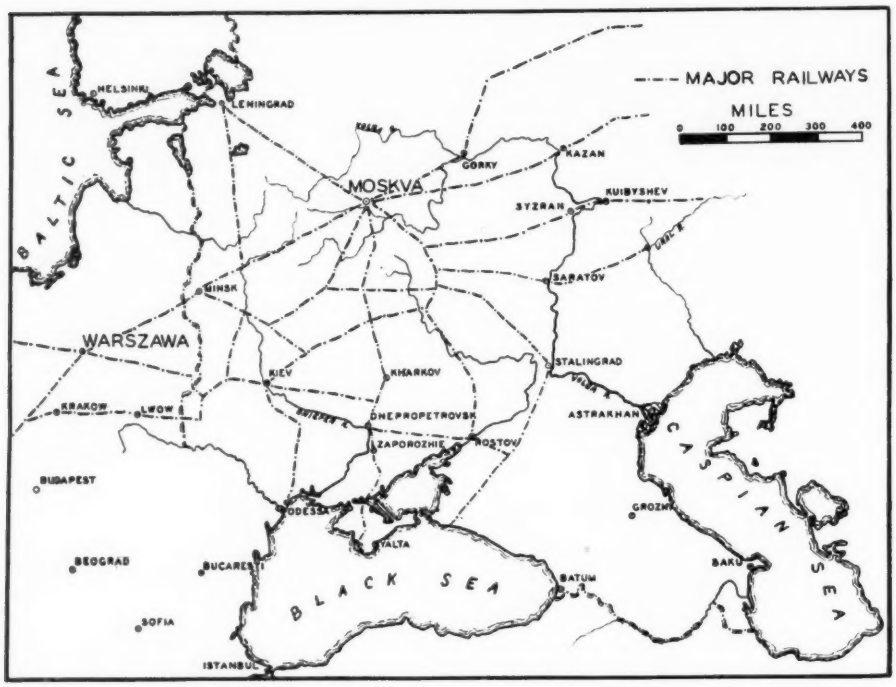

FIG. 1. Sketch map of the Volga region.

spring floods recede (Fig. 3). In the distance can be seen the white towers, buildings, and spires of old mosques surrounded by the turreted kremlin walls in such ancient river cities as Gorky and Kazan.

When the cities cling to the steep bluffs overlooking the river, the problem of ascent is no mean task. In any event, it will be necessary to walk from the boat to the first level or terrace. A street car may find its way to the main part of the city by a rather circuitous route. Carts and wagons using the direct approach zig-zag from one curbing to the other as they ascend the hill. In this way

FIG. 2. A portion of the waterfront at Kazan. The landing stage is at the extreme right; on the embankment are piles of goods and warehouses.

the vehicle is held on the steep slope without rolling backward, taking wagon, horse, and all down into the river.

From the deck of the boat at a major river town can be seen the stevadores carrying heavy boxes of hardware and nails, bulky forms of unfinished pots and pans, sacks of potatoes, kegs of fruit and kegs of fish, and bags of cement. The men file by, some smiling and joking to one another, some of more serious demeanor and lending a helping hand to a comrade. On each back is strapped a piece of wedge-shaped wood with a groove on its up-turned base. On this small box, about the size of a mess kit, the load is placed. The stevedore balances kegs, boxes, sacks, and packages by the degree to which his body is inclined forward. With agility he climbs the stairs to the top deck where excess cargo is carried, or climbs out of the hold of the boat to the accompanyment of frequent shouts of something akin to "gangway!" The dress of these workers is the usual Russian blouse or khaki shirt and ordinary trousers of most any nondescript color. Tho grass plaited sandals and white leggings of the peasant are to be seen, shoes and sneakers are the more common.

At the larger cities, endless belts convey the cargo up the embankment to the wooden one-story warehouses or to the waiting trucks and wagons. At other places the loads are carried to the sloping embankment and dumped or dropped unceremoniously in piles and heaps (Fig. 2).

THE PASSENGERS

The passengers, some departing and others boarding at these numerous local stations, present a panorama of local color mixed with introduced industrialism. Fifteen, twenty-five, fifty, eighty, and even a hundred third class passengers come and go every few hours. They depart to the city with their wares or trudge several kilometers to the rural village away from the river or at which the boat does not call. Some take a small local steamer or row boat to reach the desired destination. On come others, southbound, carrying various articles and bundles. A suitcase is likely as not pro-

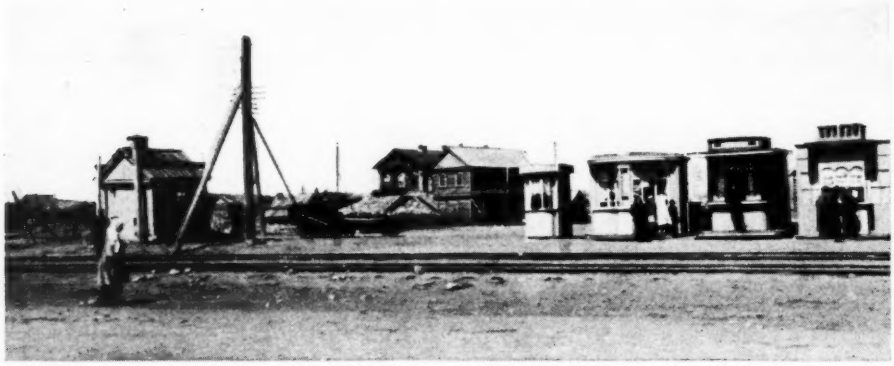

FIG. 3. Bazaars along the upper river bank at Kazan. High water usually reaches this level so these concessions must be moved about and painted every season.

tected by a cloth cover. There you see a side of beef, live pigs clutched underarm, baskets of goslings and chicks, a sack of seed potatoes, tools, even a sewing machine, a single iron bed, baskets of vegetables, here and there a dog, some children, and numerous purchases. Lunch and food are carried unwrapped, a partial loaf of black bread and a bottle of sour milk. Jostling and pushing their way to the gate, the crowd surges onto the boat for the early comers choose the best places out on the bottom deck. The overflow of these passengers pack themselves on top of the bags of potatoes and about the cargo in the hold near the machinery. Accordions and mouth organs furnish entertainment between stations.

Most of the women, young and old, wear kerchiefs over their luxuriant black hair tho many have a bobbed style. These passengers are hardworking peasants as can be seen by their muscular frames, hands, and the almost unbelievable load and weight they carry while the "man of the house" carries little or nothing. Some

of these older customs are more dominant off the beaten path than in and near the cities. As the various regions are traversed, the dress, physique, and clothing hint of Tartary, German Volga Republic, and Cossack origins.

The gong of a bell is heard, a warning to the passengers that before long the boat will depart. People still linger at the small bazaars set up along the river front. A second ringing of the bell warns the passengers that the time to buy radishes, a bottle of milk, a bit of cheese, candy or ice-cream is about over. They come rushing breathlessly to the gangplank. And so, some ten to twenty minutes after the first bell, the third warning is sounded and slowly the boat wheels on as the weeping friends and relatives left behind, the stern looking inspectors and trim officials, and stevedores watch the departing boat while the passengers of all three classes gaze intently shoreward as long as visibility permits.

FIG. 4. A log raft moving southward on the Volga. View is near Kuibyshev, formerly Samara.

THE RIVER TRAFFIC

The variety of cargoes to be seen on the passing boats and barges gives evidence of the great importance of the Volga waterway in the exchange of products between the north and the south (Fig. 4). The following three tabulations suggest the commodities seen from the deck of the river steamer, the *IIIrd International* (Fig. 5), about the last of May. With the advance of summer, fruits, vegetables, melons, and grains move northward.

A. Changing commodities carried on a passenger-cargo boat.

Bundles of skis and sticks from Kuibyshev to Saratov
Chairs from Kozmendemjanski to Kuibyshev
Empty kegs from Kazan to Astrakhan
Nails and saws from Gorky to Syzran
Potatoes from Kazan enroute to the south
Cement from Volvosk to the south
Wooden shovels for fishing boats on the Caspian Sea

B. Cargoes of passing boats met along the route.

Gravel	Lumber barges	Cement in sacks
Log rafts	Canned fruits	Soda in barrels
Oil barges	Mail packets	Sacks of wood chips
Automobiles	Coal in sacks	Sturgeon, dried, packed in kegs
Iron piping	Bundles of bark	Sturgeon packed in tomato sauce
Peeled poles		

C. Goods in and about warehouses and along the river bank.

Wood	Pans	Hanapers
Rope	Pots	Bran feed
Twine	Logs	Tar paper
Hides	Wire	Soda kegs
Poles	Grain	Containers
Scales	Hinges	Sheet iron
Bricks	Baskets	Cotton bales
Staves	Fencing	Kegs of fish
Cement	Potatoes	Chemical bottles

The steamer, an oil burner, stopped for fuel once in twenty-four hours at the filling stations anchored out in the river. At the time the tanks were open, no smoking was permitted and other safety measures were enforced. Both men and women worked at these fuel depots.

NEW INDUSTRIES

In the very recent past, two new industries have experienced a rapid growth along this Volga route. The oil developments in and about Syzran appear in the evening twilight much like an oil field in Kansas—but closer inspection reveals the numerous thatched roofs and the old dwellings of the former rural village awakened in 1937 to find drilling developments at the very door step. Refineries, tanks, derricks, murky street lights, and housing projects are but hints of more that is to come. With this new and near source of petroleum, the industrial north central part of Russia becomes less dependent upon the more distant Grosny and Baku fields.

The other development is that of cement which uses the limestone of the river bluffs in several convenient places to the north and south of Saratov. With this building material, it has been possible to construct the grain elevators at Kuibyshev, Saratov, and elsewhere; to build new factories and new housing projects in these rapidly growing cities of industrialized Russia. Among such enterprises are the automobile plants at Gorky, the tractor works at Stalingrad, and agricultural machinery shops at Saratov. All these cities command important sites along the Volga. The tall smoke-

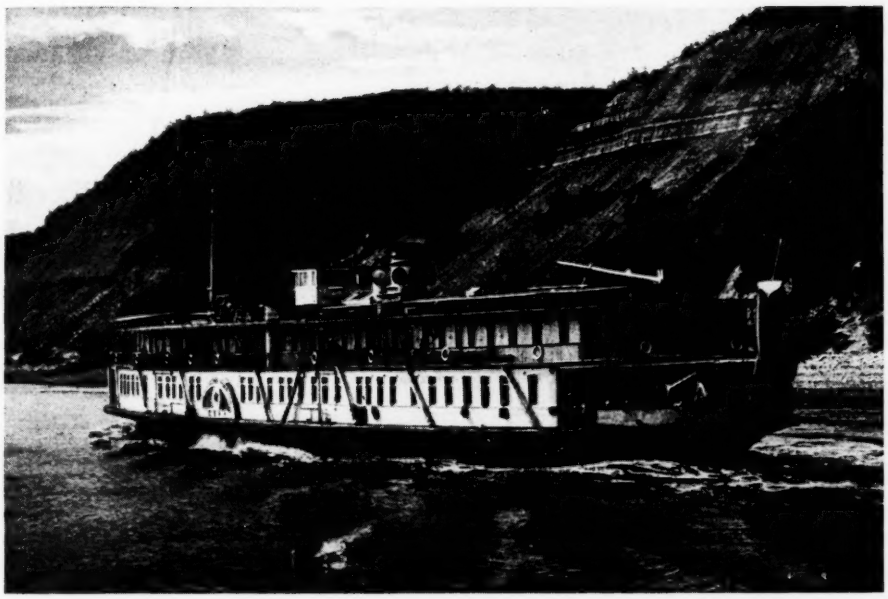

FIG. 5. The oil burner, the *IIIrd International*. It was built in 1913 tho since overhauled, repainted, and in shipshape.

stacks and the batteries of factory buildings are visible from the steamer as it wheels about the river toward the landing stage.

THE RURAL SCENE

Between these boom cities whose population has doubled and tripled in the fifteen years, now numbering 200,000 to 500,000 inhabitants, the rural aspect dominates the scene. Villages with populations of a few hundred to a thousand or more dot the course of the Volga. Rows of wooden houses with thatched roofs face the wide dirt-roads of the settlement. The church of the old order of things is still the only elaborate building towering over the countryside. The spire still points to the sky, the towers still gleam in the few rays of sun that break thru the low scudding clouds at sunset along the Volga horizon.

These rural villages appear to have no telephones, no radios, no roads that lead anywhere every season of the year. The unpainted houses are small and of log or frame construction. Three windows mark the front room of the house, a stoop indicates the one door which will be at the side or the rear. Occasionally a new roof, some red roofing, or light blue window frames will be the one bright

note in this almost treeless bleak setting. Along a ridge top or on some slight rise of ground near the village may stand a wooden windmill. The tall box-like structure with its awkward arms grinds some of the grain for the community. Along the river bank some children are at play throwing stones, others are fishing and rowing about in boats. The Volga seems to be as much a part of their life as is the land.

CONCLUSION

Boats pass by all thru the night and all thru the day, up and down the river—boats, people, cargoes. Gone are the boatmen of song and poetry, and gone are the traders whose wares were brought to the Russian Fairs by caravans from the Far East. Today the Volga is linked with canals which provide a great inland system of transportation with outlets at the Gulf of Finland and the White Sea. Tho it serves this larger area, the Volga still retains the color of the local countryside.

SOIL EROSION

The Significance of the Problem and Its Attempted Control

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THE MAGNITUDE OF THE PROBLEM

Civilization and Soil Erosion. Soil erosion is a problem of major national significance. The permanence and prosperity of this or any country is dependent upon the conservation of the soil resources. Until recently little was known concerning the relationship existing between the misuse and wastage of land and the disintegration of past civilizations. Now, however, studies and investigations have definitely established the major role which the destruction of soil has played in the deterioration or disappearance of great nations in Asia, Africa, Europe and even America. Such evidence clearly brings forth the vital importance of planned conservation and proper land use to the permanence and prosperity of our own civilization.

Dr. Lowdermilk states that in the case of China, the only country where a civilization has persisted continuously from legendary antiquity down to the present, it was the destructive use of land rather than climatic changes which was responsible for reducing

the once highly prosperous northwestern regions down to their present state of decadence and poverty (3, 6).*

Other scientists have reached similar conclusions with regard to other ancient centers of culture. In North Africa Carthage rivaled Rome in the richness of its Phoenician civilization and later this region became the great granary of the Roman Empire. It is stated that as recently as five hundred years ago large parts of the region now known as the Sahara Desert supported forests, but that as the Moors swept across this semi-arid country they brought with them hundreds of thousands of goats, which destroyed that scanty vegetation as the overgrazing in our west is doing today. Once gone, the water level lowered, and no power known can bring back that region to its former status.

Even in Europe the story is hardly less drastic. Largely as a result of soil misuse, Greece, in the space of a few hundred years, passed from its dominant world position to the relatively humble position it occupies today. According to Dr. Felix Regnault, at the time of the Roman occupation, Greece, which a few centuries before had put millions of armed men in the field could muster but a few thousand (2, 77-80). As regards its conqueror, Dr. Vladimir G. Simkhovitch concludes "that the progressive exhaustion of the soil was quite sufficient to doom Rome, as lack of oxygen in the air would doom the strongest living being" (6, 241-2). Today Italy is spending $500,000,000 in a great project known as the "Bonifaca Integrale" in an attempt to save and rebuild the remaining soil resources it so desperately needs.

In visiting many of the ancient centers of Asia Minor, the author was appalled by the utter desolation. Soil which once supported teeming millions of peoples and enlightened cultures is now inhabited by a most fragmentary population, eking out a bare and miserable existence in a very inhospitable land. As to the former grandeur of Asia we might say with Omar:

> They say the Lion and the Lizard keep
> The Courts where Jamshyd gloried and drank deep:
> And Bahram, that great hunter—the Wild Ass
> Stamps o'er his Head, but cannot break his Sleep.

The records of history, indicate only too clearly the inevitable results of the exploitation and wastage of soil. Referring to these ancient and despoiled civilizations, Dr. Simkhovitch says: "Look

* Numbers refer to references at end of chapter.

at the unpeopled valleys, at the dead and buried cities, and you can decipher there the promise and the prophecy held in store for all of us. It is but the story of an abandoned farm on a gigantic scale. Depleted of humus by constant cropping land could no longer reward labor and support life; so the people abandoned it. Deserted, it became a desert; the light soil was washed by the rain and blown around by the shifting winds" (5, 400).

On the virgin soil of a new continent it has been hard for us to picture what the lack of arable land may mean. Nature provided most abundantly for us, so much so that during the last few years we have plowed part of our unneeded harvests back into the soil. Thus abundance is far from the case in other portions of the globe, where it is estimated that perhaps as many as half the people of the world go to bed hungry at night (7, 4).

The Crisis in America. Let us look for a moment at our own soil resources, which so short a time ago were untouched by man's destructive methods. The destruction and devastation that has surged westward following the settlement of our country during the last century is almost beyond belief. Already on 70 per cent of the land area of the country much of the fertile topsoil has been removed or is totally gone. Only about 461,000,000 acres or a little less than one-fourth of the total land area is classed as suitable for the growing of crops. Of this arable area some 50,000,000 acres of good farm land has been completely and permanently ruined in the last sixty to seventy years. In addition to this about "125,000,000 acres of the 350,000,000 now in cultivation in this country have lost from one-fourth to three-fourths of their topsoil and are a national liability and not an asset, because, due solely to erosion, what they are producing in addition to submarginal crops, is submarginal citizens" (8). Still another 100,000,000 acres of this arable land is rapidly following the same path (4, 4).

The social and economic losses resulting from this misuse of the land are enormous. The Soil Conservation Service estimates that man-accelerated erosion has reached an annual cost to the nation of probably not less than $400,000,000 as measured by soil depreciation and reduced yields alone (4, 4). The real loss to future generations can never be measured in dollars and cents. The potential value of the 50,000,000 acres already destroyed, added to the 225,000,000 now on the way and bringing in reduced yields, is beyond estimation. Some concept of the magnitude of this waste can be obtained by picturing conditions a century or so in the future

when the country will no longer be a land of fertile soil and high yields, but in large part perhaps as barren and bleak as once fertile regions now found in older portions of the world. Aside from the physical loss of the soil itself, other consequences of great importance result from erosion. The utility of the billions of dollars that have been spent in improving navigation, irrigation, water power, municipal water supply, agriculture and grazing has been impaired; flood peaks have been augmented and flood control works have been made less effective; and fertile soils have been ruined by sterile sedimentation. "This wastage of the most basic and indispensible resource of the Nation, the soil, has become one of our most pressing problems. From a country with the greatest proportional area of rich agricultural land we are plunging, almost heedlessly, in the direction of a nation of predominately poor agricultural land, as the result of unrestrained erosion" (4, 4).

The following table, compiled from data condensed from Part V of the Supplementary Report of the Land Planning Committee to the National Resources Board, gives a vivid picture of the severity of the erosion problem.

EXTENT OF SOIL EROSION IN THE UNITED STATES

		Acres	%
Total land area of the United States		1,903,000,000	100
Little or no erosion (1)		576,000,000	30.3
Area affected by erosion (2)		1,327,000,000	69.7
Barren lands, erosion undefined (3)	145,000,000		7.6
Land essentially destroyed for tillage			
By gullies	4,000,000		0.2
By wind erosion (4)	9,000,000		0.5
By sheet erosion (5)	100,000,000		5.2
Total, land destroyed	113,000,000		5.9
Over ¾ topsoil and some subsoil lost			
By wind erosion (6)	89,000,000		4.7
By wind and sheet (7)	13,000,000		0.7
By sheet erosion (8)	67,000,000		3.5
Total	169,000,000		8.9
From ¼-¾ of topsoil lost			
By sheet erosion (9)	569,000,000		29.9
By sheet and wind (10)	78,000,000		4.1
By wind erosion (11)	142,000,000		7.5
By gullying (12)	111,000,000		5.8
Total	900,000,000		47.3
		1,327,000,000	69.7

(1) Areas on which less than ¼ of the area was affected by erosion; this area is largely unsuited for cultivation, consisting in part of prairie lands in the midwest and flat alluvial lands in the southeast, but comprised predominately of forested lands in the Northeast, Lake States, and Pacific Coast regions.
(2) On this area erosion was found as the prevailing condition, more than 25% of the land having been affected to the extent and by the means listed below. With the exception of the area listed as barren lands etc. (4), the erosion gave evidence of being accelerated or man-caused.
(3) This area consists of barren mountain tops, mesas, canyons, bad lands, rough mountain land, scablands, and rough stony lands located largely in the west where it was not found possible to readily differentiate between normal and accelerated erosion. Erosion on this area is generally moderate to severe.
(4) There is very little gullying on this area
(5) Gullies present on nearly all of this area. (See footnote 8)
(6) Gullies on approximately 23,000,000 acres, being frequent on approximately 11,000,000 and occasional on 12,000,00 acres.
(7) Gullies present on approximately 9,000,000 acres, being frequent on approximately 8,000,000 and occasional on 1,000,000 acres.
(8) Gullies present on all but approximately 7,000,000 acres. On the 167,000,000 acres destroyed or seriously damaged by sheet erosion, gullies are frequent on about 104,000,000 and occasional on 56,000,000.
(9) Gullies present on all but 98,000,000 acres, being frequent on about 91,000,000 and occasional on about 390,000,000.
(10) Gullies present on all but 18,000,000, being frequent on about 17,000,000 and occasional on about 43,000,000.
(11) Gullies present on approximately 17,000,000 acres, frequent on about 1,000,000 and occasional on about 16,000,000.
(12) Moderate to severe gullying with little or no sheet erosion.

The tangible losses resulting from erosion are, as has been shown, varied and great. These losses, unfortunately, are not the only ones, but result in other losses which cannot be measured in terms of money.

Thru soil erosion, vast areas of productive land are being transformed into areas which will not produce paying crops. Farmers on these areas are receiving steadily decreasing incomes, until ultimately they will be reduced to "bankrupt farming on submarginal land." As this progressive poverty increases tax delinquency and tenancy expands (in the country as a whole over 60 per cent of the farms are not now owned by the people working them), the standards of living and the characters and abilities of the people are definitely lowered, and expenditures for relief purposes are necessitated on a vast scale for these stranded populations on erosion depleted land. Soil is our most basic resource. If we do not care for it, it cannot care for us. Without soil we as a nation must perish. These are not disputable statements—they are well proven facts. In an address on great current problems, Will Durant has stated truly that: "Ultimately every civilization is based upon the soil."

The Character of the Problem

Normal and Accelerated Erosion. With the increasing public interest in erosion, there is danger that normal erosion be confused with man-accelerated and man-induced erosion. Erosion, a process as old and continuous as the earth itself, is nature's effort to make flat the surface of the earth. In so far as we are interested, erosion might be defined as the carrying away of soil by water, wind, or ice. We see signs of this natural erosion all about us. The rounded forms of the eastern mountains have reached this advanced state thru erosion, while the rugged western mountains depict a more youthful condition. Geologically mountains are considered as a young feature. It was natural erosion that, thru the ages, built up the delta of the Mississippi; that enabled the Colorado River, carrying sediment that had been carved from the gorge known as the Grand Canyon, to fill in a portion of the Gulf of California thus separating the northern part, now known as the Imperial Valley and Salton Sea, from the Gulf itself; that, in short, has determined the final form of all topographic features prior to the invasion of civilized man.

Under these natural conditions a nice balance had been achieved between soil erosion and soil formation. The vegetal covering and the soil protected by it had reached a mutually dependent condition thru the long ages of their concurrent development. Over the major portion of the land the rate of soil formation exceeded the rate of soil removal, as evidenced by the gradual accumulation of soil. But the rate of increase was very slow. During the eons in which the building process had been going on, the soil mantle in the United States had reached an average thickness of only a few feet, while the true topsoil, the layer containing the humus with its life-giving fertility, averaged only about seven inches in depth (4, 6).

Into this stored fertility of ages came civilized man (the Indians probably never numbering more than one million had not noticeably changed the virgin character of the land surface in North America). The delicate balance was upset and the rate of erosion increased many hundred fold.

The Principal Kinds of Erosion. Erosion can be caused by the agencies of water wind or ice. Only the first two are important factors in accelerated or man-caused erosion, and of these erosion caused by water is the bigger problem.

Water erosion is of two kinds, either that in which the soil itself is removed, by the action of running water, or in the loss of fertility

thru leaching. This latter type, while not as dangerous a problem as physical erosion, is a very costly one resulting in reduced yields per acre and the need for extensive fertilization. Leaching is the major cause for the sterility of long cropped farm lands. In this type of erosion the particles of the soil are left intact, but the essential plant foods which have been stored in the soil are dissolved out and carried away by the water.

Physical erosion that has been caused by the action of running water has been classified into four major types:

1. Sheet erosion involves the equal or sub-equal removal of a thin sheet of soil from entire sloping fields. This type of erosion is well nigh universal, being in progress more or less actively on almost every acre under the plow, and it is especially dangerous because of its insidious, less readily observed manner of action.

2. Rill erosion is closely allied to sheet erosion. But in this case diminutive crowded gullies are formed, often only an inch or two deep and with vertical walls.

3. Gully erosion is generally the final stage from which there is no recovery. Sheet and rill erosion will eventually merge into gully erosion.

4. Valley bottom erosion, to a large extent a result of other types of erosion upstream, may be caused by floods either washing away fertile soil or superimposing infertile material on good soil, or it may result from the meandering of the river.

Wind erosion is a problem restricted to the regions of scanty precipitation, which in the United States are centered in the semi-arid high plains of the west.

THE PRESENT NATIONAL EROSION POLICY: ITS SIGNIFICANCE, IMPLICATIONS, ADEQUACY AND SOUNDNESS

The establishment of the Soil Erosion Service in 1933 was the first definite recognition by the Federal government of its responsibility for solving the problem of soil erosion. Prior to this time other public agencies had done much, thru experimentation and research, to determine the causes, nature and methods of control. Efforts to improve land use centered around education and research and while much good was accomplished only a very small percentage of farm lands were managed with erosion control in mind.

In 1935 the Soil Erosion Service was transferred from the Interior Department to the Department of Agriculture and its name

changed to the Soil Conservation Service. The program of this Service was first, to actually demonstrate that erosion could be controlled, and second, to lay the foundation for a permanent national erosion-control program. To accomplish the first of these objectives, typical and well distributed areas were selected thru the United States where erosion conditions were serious and where the cooperation of the land owners could be secured. On these areas all necessary erosion control measures were practiced and careful records kept. By 1936 one-hundred and forty-one such projects including millions of acres had been established. In order to pave the way for actual nation-wide erosion control a reconnaissance of erosion conditions over the entire country was carried out, which gave the basic data so badly needed for determining how and where most effort was needed.

Whether this dual attack of research and education would have proven sufficiently forceful to have met the situation will never be known. Under the Agricultural Adjustment Administration the New Deal had committed itself to the policy of payments to farmers for crop reduction and when this act was declared unconstitutional the entire farm program suffered a paralytic blow. During the resulting confusion it became apparent that in the new Soil Conservation Service lay the foundation upon which the original farm program could be continued on a more sound legal and practical basis. In place of bounties paid for mere crop reduction, payments could be made, ostensibly or in reality, for soil conservation thru improved land use methods and the same results achieved. Immediately an amendment was rushed thru Congress granting the necessary additional powers to the Soil Conservation Service.

As a result of this, almost overnight the work of the Soil Conservation Service was enlarged to actual nation-wide erosion control. The importance, significance, and dangers embodied in this present program should be carefully considered.

First, should be considered the legal basis on which the present program depends. Unfortunately payments can be made for mere crop reduction as well as for improved land use practices. In the opinion of the author this is unsound both socially and legally; legally in that it does not differ from the practice already declared unconstitutional; and socially in that it pays farmers for doing nothing. As the desire to get something for nothing develops, human beings lose those qualities of self-reliance, courage, industry and independence which are essential not only for democracy but

for the very continuity of a nation. The great danger in the farm program, the relief program and the labor progam, lies in the further submergence of these vital qualities which have made this nation great.

Another serious danger to the soil conservation program lies in the very rapidity of its expansion and widespread public support. Men trained in work applicable to soil conservation were few and the tremendous development of the service demanded a large personnel. Under these conditions it was inevitable that many inexperienced or inefficient men should become a part of the personnel. Emphasis upon unemployment and relief was almost as great as was the emphasis for effective soil erosion control work. Because of this it would have been remarkable if large amounts had not been spent unwisely, inefficiently, and not impartially. The newness of the work resulted in a lack of long time, comprehensive plans and the necessity of using untried theories and methods. All together, these elements have cast grave doubts on the success and future of the work.

The dangers then, in the present program, lie in an unsound legal basis, an unwise social trend, and inefficiency and incompetency in administration. In the opinion of the author the legal and social dangers could be largely overcome rather simply and in a manner that would further improve and increase the effectiveness of the entire farm program. Payments should not be granted for not growing crops. That is unsound socially and legally. The same results could be achieved, crops could be reduced and farmers aided, if instead of granting payments on this negative basis, all payments were made because of actual improved land use. If payments were made on a fair labor scale this would be inducement enough to achieve the desired ends. Most farmers now realize that they are being paid for doing something they should have done themselves. Crop reduction, as determined by experts could usually be obtained thru improving land utilization, or if sometimes necessary thru agreement with the owner before payments would be granted him; but the payments should be only for actual improvements achieved. This would strengthen the legal status of the Act and put it on a more honest basis, it would tend to replace in the farmer a pride in achievement and a sense of not being on a dole with its resulting demoralizing effects, and finally it would make actual erosion control a much nearer reality.

This tremendous job of erosion control is one of the most difficult that man has undertaken. It must be achieved if this nation is to survive. There is no alternative. It can only be achieved thru an adequate, coordinated program of land use and land protection. The longer actual control is postponed the more difficult it will be to achieve. Only under efficient leadership, enjoying public support and supplied with adequate funds can any such program be successfully carried thru. This problem is so acute and so vital to national welfare that, where necessary, interference with private rights is justified. However actual government regulation should not come unless all possible efforts to achieve protection of the land thru individual efforts assisted by government aid, research, demonstration and education have been proven a failure. Morris L. Cooke, former chairman of the National Resources Board, has thus summed up the erosion situation: "Just as with bodily diseases such as cancer and tuberculosis which can be cured only in the early stages, so it is with soils built up thru the ages. Once ravished beyond a certain point, they are incapable of restoration except by nature's slow processes, which are measured not in tens, but in thousands of years. Leaving out all 'ifs,' 'ands' and 'buts,' running the risk of being precise in an area where precision may have no place, I believe that at our present rate of soil erosion this country of ours has left to it less than a century of verile existence" (1, 99).

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GEOGRAPHICAL INFORMATION PLEASE!

WALTER W. RISTOW
New York Public Library

In recent years, trained geographers, thru their activities in various governmental or commercial enterprises, have demonstrated the practical side of the science of geography. Business executives and governmental officials are ready to admit the need of geographical knowledge. Few individuals would agree, however, that they personally would ever have need for a greater knowledge of the subject than they had acquired in elementary school.

A visit to the Map Division of the New York Public Library would serve to dispel this skepticism. With thousands of maps and atlases at their disposal, the Curator of Maps and his assistants daily dispense cartographic and geographic information to upwards of fifty individuals. Some visitors come to check up on world affairs, but the majority of the requests are of a much more personal and practical nature.

A flood in California, a hurricane in New England, a forest fire in Minnesota, or a bombing in Shanghai are sure to call forth numerous requests for maps by individuals who have relatives or friends in the sticken areas.

WHEN BOUNDARIES CHANGE

Changes in the political boundaries of Europe excite most of us for a day, but we soon take them for granted. Not so the individual who was born in a region which has changed hands several times during his lifetime. Many such persons consult old and recent maps to aid them in establishing a legal birthplace to fulfill requirements for naturalization or social security. Such a problem was faced by a recent visitor, a native of a very small town near the head of the Adriatic. Was he an Italian or a Yugoslav? Only a detailed map could give him the correct answer.

Exporting companies are also directly concerned when boundaries are changed, and many of them call to determine the new status of specific towns or cities. Motion picture distributors likewise are interested when territories come under the control of more rigid censorships.

An aftermath of boundary changes, and attendant persecutions, is noted in the number of exiles who are consulting maps of the United States, and seeking information about certain regions, preliminary to establishing new homes. Of this type was the case of a

young exiled Austrian ski instructor who sought information as to the principal centers of this sport in America, with the idea of obtaining a position with some school or sporting association. Various representatives of refugee aid groups have consulted detailed maps of selected areas in South America with an idea to determine their suitability for settlement by political exiles.

Geography and Romance

But all the requests are not so pathetic, for at times even cupid is aided by a knowledge of geography. Recently a young couple called at the Map Division to determine the exact latitude and longitude of their respective birthplaces to aid in compiling astrological horoscopes. There was more than a hint of romance in the telephone request of a young lady who desired information about a Central American country in order to speak intelligently with a young Latin-American she had recently met. Similarly, the fiance of a young American employed in Havana, studied maps of this city and the Island of Cuba preparatory to making her home there. One enthusiastic young couple, contemplating starting married life in a new environment, consulted maps and sought information about Australia.

Looking Backward

Maps are frequently the only means of reconstructing details of past events. Daily, therefore, amateur genealogists and historians study maps to check on the birthplaces of ancestors, or to trace routes of travel or migrations. Old maps of New York City are frequently consulted to determine the location of historic events or sites of early buildings. Occasionally a representative of some business concern will study old maps of the city in an endeavor to establish the historic background of the site for use in advertising. A young Greek lad called one day to see a detailed map of the small Aegean Island which was the birthplace of his mother.

The map librarian frequently proves to be a "friend in need" to perplexed stenographers who are unable to spell the name of an unfamiliar city dictated to them by the "boss." A telephone call to the Library usually solves their problem. In a similar vein, lecturers call to check on the correct pronunciations of geographical names.

Guide and Travel Service

Another function of the Map Room is that of a guide service. Frequent calls are received from individuals seeking directions or

locations of certain buildings. One housewife, faced with the problems of entertaining out-of-town visitors, found a solution after studying maps of New York City and Long Island which showed historic and scenic centers. Sailors on shore leave stop at the Map Room to plan sight-seeing itineraries within the city, and to check on the transportation lines. Boy scouts and other lovers of the outdoors consult hiking guides, trail maps, and government topographic maps in planning week-end outings.

Complete sets of oil company road maps for all the states in the union prove helpful to many in planning motor vacations. For trips beyond the borders of the United States, road maps and guide books of foreign countries are available. Many prospective travellers study general and detailed maps to gain preliminary knowledge of countries on their itineraries.

Some singular requests are received by the librarians. Such was that of a would-be adventurer who studied maps of Canada and Alaska, in the hope of completing a trip, entirely by automobile, from New York City to his native Sweden, via Bering Strait and Siberia. Somewhat amusing was the visit of an official of the Hobo's Fellowship Association who consulted maps and laid out travel routes for members of this national brotherhood.

Art and Cartography

The increasing use of maps in interior decorating is reflected in the problems of some Map Room visitors. Advice is sought on the proper methods of cleaning, repairing, and mounting old maps. Prospective purchasers of maps or globes request names and addresses of reliable dealers. Or the Map Curator may be called upon to verify the authenticity of the date or the value of a map already purchased.

A professional artist studied old maps of a certain locality to obtain ideas for a mural he was executing, and a young lady traced the outline of Cape Cod to use as a lamp shade decoration.

The increasing popularity of pictorial or animated maps for display and advertising purposes brings many artists to the Map Room to study the cartographic masterpieces of the seventeenth century for ideas to use on these modern decorative maps. Photostatic reproductions of old maps are frequently used in book illustration or advertising, and one young man used a reproduction of a part of the title page of a rare old atlas to illustrate a Christmas greeting card.

Maps for the Business Man

Business men frequently resort to maps to solve their problems. Real estate dealers are daily users of the land atlases of New York and suburban localities. Real estate atlases and insurance atlases are frequently in demand by individuals preparing for jobs or studying for Civil Service examinations. A chain grocery store representative consulted street plans of several mid-western cities to locate possible sites for new stores.

One manufacturer interested in a certain tropical product, desired climatic and soil maps of Haiti to determine that island's possibilities as a site for a plantation. The travel manager of a theatrical company consulted a map of the St. Louis business district in order to locate a hotel near the theater.

Most individuals are delighted when they find on the map the information they seek. Not so an employee of a motion picture studio, who checks indexes in atlases to make certain names of places used in a picture have no actual counterparts. Picture producers also consult old maps in preparing historic films, and many travelogues utilize reproductions of maps from the Public Library collection.

Journalistic Cartography

Increasing interest of the public in world affairs has led to a desire for greater knowledge of geography. Newspapers and magazines are responding with more space devoted to maps of various types to illustrate their stories and articles. Recently one metropolitan daily obtained from the Map Room reproductions of old maps illustrating the troubled history of Albania.

A picture magazine desired a series of economic maps to illustrate a feature on the self-sufficiency of the United States. From a digest magazine came a research worker to obtain information for a story about road maps, and a map of Mount Vernon was reproduced as a background for a cover illustration on another magazine.

At times, a court case may be decided on the basis of geographical knowledge. Lawyers representing construction companies, frequently consult the map showing the original topography and water courses of Manhattan Island. More unique was the problem of the attorney for a rug company, who consulted pictorial maps of the United States, to formulate a defense for his client, in a suit brought by an individual, who claimed credit for a map idea which the company had used as a rug pattern.

The requests for geographic information are innumerable, and it is hardly necessary to enlarge upon the examples already given. The variety of problems and the great diversity in occupations of the individuals seeking information, should suffice in convincing even the most skeptical of the practical importance of a knowledge of geography in everyday life.

ALPINE AND THE DAVIS MOUNTAINS OF TEXAS

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The area including the Davis Mountains of Texas extends from the Pecos River westward to the Mexican border, and is often referred to as the land "West of the Pecos," or, more recently as "The Big Bend." This is a practically unknown region to the average man and woman, and yet white men first entered here more than four centuries ago. Raht, in his *Romance of the Davis Mountains and Big Bend Country,* says, "Forty-three years after Columbus discovered America, Cabeza de Vaca came to this section of Texas. He found a great region of lofty peaks, deep canyons, magnificent valleys, and wind swept plains—a region which is an empire in itself, three times the size of Belgium, and equal in area to Ireland, South Carolina, or Maine." Here, even today, one may travel for miles over a country almost untouched by any sign of human habitation, and it was not until the coming of the railroads in the early eighties that important contacts were made with the outside world.

GEOGRAPHICAL SETTING

This region is made up largely of fault-block mountains with evidence of past volcanic activity.[1] The mountains rise from a plateau of from 3,000 to 4,000 feet above sea level. The highest point is Guadalupe Peak, 9,500 feet.[2] Between the ridges are wide level basins, either rock-strewn or filled with loose soil, washed by the fitful rains that fall upon the mountains. The average rainfall is less than ten inches, and most of it comes in summer. This is a delightful season, even tho at midday the sun is very hot. The

[1] Geologic Atlas of United States, Van Horn Folio by G. B. Richardson, Washington, D.C., 1914.

[2] Texas Almanac, 1936, page 172.

cold dry winters are not uncomfortable, but the spring winds bring disagreeable dust storms.

The wind swept, gnarled old cedars, the juniper trees on the mountain sides, and the scant grass, or scattered cactus, with the occasional herds seen in the distance, remind one of the Mediterranean lands.

Use as a Roadway

The first use of this area to the white man was that of a roadway, and the story of the development of transportation here is inseparable with the development as a human use region. Following the Spanish explorers were other attempts to cross the country. The old Butterfield Stage Coach route crossed the area, but this was an uncertain method of travel. After the Mexican War, the establishment of military posts brought a few people. The establishing of Fort Davis in 1854 as an intermediate station of the army-camel route between Cape Verde in Kerr County, and Camp Yuma in California marks the beginning of the present town of Fort Davis. A group of adobe huts, once used for the army headquarters, still stands. Today, Fort Davis is the one exception to a town of its size (1,000 population) not located on the railroad in this section. It is a mile above sea level, located in a basin in the heart of the Davis Mountains.

The United States still maintains border patrol stations in the Big Bend. Fort D. A. Russell, an army post, is also located at Marfa, and Fort Bliss at El Paso. The Southern Pacific Railroad on its way to the west coast brought the first dependable connecting link for this part of Texas with the outside world. Other railroads intersect, and highways have been made; however transportation is still a problem in the Davis Mountain area.

Ranching

Ranching is necessarily the leading occupation of this section, and since the ranchman needs from 2,000 to 8,000 acres to support a family, this cannot be a densely populated area.[3] E. O. Wooten, writing from New Mexico Agricultural and Mechanical College, gives this description of the ranch home in this intermountain region:

> An adobe hut, of one or two rooms, is set on a sun-blistered flat where bulls paw up clouds of pungent dust while they bellow challenges at each other. Miles away, thru quivering air, dance the distorted outlines of cool, timbered mountains. . . .

[3] J. Russell Smith. *North America*, p. 457.

A one-room log cabin with a "lean-to" in a beautiful mountain valley, but with every vistage of the native forest cut away from all around the house for fifty, or a hundred yards on all sides. These are by no means the only kind of ranch houses, but they are by far the commonest.[4]

The better homes of the well-to-do ranchman have modern conveniences, but ranch homes that are outstanding for their beautiful grounds are not often found. To grow trees and grass requires constant watering, and much labor.

The ranch children are usually taught by a private teacher during the early years, at least the children of the more wealthy ranchman. Later they are sent to the town schools, or to college. However, school is always a problem for the ranchman's children, and, in too many cases, it is practically impossible for them to go to school. Many ranch families move to the nearst town for the school months. This tends to make the ranch home a sort of summer abode for the women and children, and to create a lack of interest in the place as home.

Cattle raising was the first form of ranching here, and today the cattleman is king of the livestock industry. But when profits from wool and mohair became greater than those from cattle, more attention was given to raising sheep and goats. Finally, some of the big cattlemen stocked their ranches with these animals, and as a result, the sheep and goat herder has risen in the social scale until he is now almost on social equality with the cattleman.

GROWTH OF TOWNS

Practically all the towns in this section grew up as a result of a need for shipping points for the ranchman's products. Some minerals are also shipped, and among the few products from irrigated areas are apples from the valleys near Fort Davis. Railroad shops at Sanderson, and other places along the way, furnish employment for a few people, thus adding to the development of towns in this section. Many people came for the benefit of the high, dry atmosphere, as an aid to overcoming disease, particularly tuberculosis and asthma. The white population is decidedly cosmopolitan, but it is perhaps largely from the southern states.

ALPINE AS A TYPICAL TOWN

It is in the towns of this section that the largest percentage of the people live. Of the 6,000 people in Brewster County, about half

[4] E. D. Wooten. *Trees and Shrubs of New Mexico,* pp. 11 and 12, Bulletin No. 87, New Mexico A. & M. College.

live in the town of Alpine. Alpine, with a population of 3,500 beginning as a cattle shipping center about 1887, may be considered as a typical town of the Davis Mountains; however, it does have the advantage of being a college town which no other place of the area has, with the exception of El Paso, and El Paso could hardly be considered as a typical town of this section.

First Impressions. If one enters Alpine from the east on the Southern Pacific train, after traveling, perhaps all day and all night from an East Texan town 800 miles away, he will likely be the only passenger. He looks out thru the clear atmosphere to see a cluster of brick buildings placed against a gaunt, bare, rocky mountain on the east. "S. R.," painted in giant letters across the mountain side, tells him this is Sul Ross College. There is a gentle slope toward the west where the town nestles in the basin, surrounded by mountains on all sides. At the western end the "Twin Sisters" stand guard. The train pauses barely five minutes, then passes on its westward journey. The passenger looks about for a taxi, but none meet the train; however, a porter from the one hotel in town asks for the bags, and the hotel is just across the railroad track within easy walking distance. The hotel is unusually good for so small a town. A glance around, and a few fragments of conversation reveals that most of the guests are tourists, even tho the tourist season seems almost over. Most of them wear boots and riding breeches. Southward, across the track, an irregular arangement of poor adobe houses are seen sprawling on a much eroded slope. The cross on a humble little church and the dusky-faced, brightly clad groups of young people loitering in the autumn sunshine indicate that the fifty per cent Mexican population is much in evidence—a little bit of old Mexico living here in their pitifully poor little adobe huts. The railroad track is a sharp dividing line between American and Mexican Alpine.

Alpine from the Shop Windows. Altho it was warm an hour ago, at sunset there is a decided chill in the air as the stranger walks for the first time down the streets of this little western town. A saddle shop displays every sort of leather goods for the westerner, chaps, bridles, saddles much decorated, high boots, also decorated with much stitching and colorful inlaid work—very high-priced. A display of clothing for school children includes slacks, shirts, boots, and riding breeches. Boys' and girls' clothing are much alike. J. C. Penny's window, however, has a display of women's clothing, among them evening dresses. In a window skilfully displaying mounted deer, and a panther in their natural setting, is a placard

reading: "See Sam Harris for permit to hunt on his ranch. Rates reasonable." An antidote for the rattlesnake bite is advertised in this window underneath a picture of a rattler. Shaded glasses are always among the tourist supplies.

The "Kandy Kitchen," a combination drug store, bus station, and dance hall, is also decorated with mounted eagles, deer heads, and panthers placed against the shaded lights of the section used for dancing. The cafe offers a Mexican menu which always includes chili and red beans. Beef is the only meat except on special occasions. Pork is rarely served. No elaborate fruit displays are found in grocery windows, and fruits are high priced.

Types of Architecture. The architecture of the town presents a queer mixture. The older looking houses are built largely of wood. The ornate style of the nineties is seen in an old hotel near the railroad station, no longer used as a hotel, but standing high and frail looking against the rugged background of a mountain. One learns that it was the scene of gay times in former years. The hospital, an old dwelling house, is a two story wooden building, that looks queerly out of keeping with its low adobe neighbors. An old house near the western edge of town, adobe, gray and unattractive with a bare yard devoid of any trees, has a porch supported by great pillars, seemingly taken from some old southern mansion, oddly out of place here. Then another adobe, painted, and two stories, with a pointed roof, and ivy-clad walls—a wind mill that runs all day keeps the grass green. This is the home of Judge Van Horn.

On one edge of the town is a small adobe, just like many of its neighbors except that there is a dogwood, and a red bud carefully watered growing in the front yard, and a few fruit trees at the back. An old man and his wife live there. Inside, hanging above where the fireplace would be if there was one—they use a coal heater—is a painting of long-leaf pines. The old man looks lovingly at the picture. "You see," he said, "I sleep better here. The nights are never hot,"—his reason for moving to the West. But his wife explains, "They thought I couldn't live if we stayed back east."

A building flying the flags of Mexico, and of the United States attracts attention. Men loitering about are in uniform, but not army uniforms. On going near these words, in big letters across the front explain: "United States Border Patrol."

Of two churches in town, one looks as if it came from Spain, the other might be found in almost any Southern town, and, on drifting into the one that looks most like home, the East Texan finds that

the form of worship, and the songs are those that have come to us thru many generations in the South. It did not take long to learn why this little town was able to get so gifted a young minister. In the course of the evening he told us, "I came to the West from Jackson, Tennessee, a sick man. I thank God I am now well."

Social Life. Social life here is not greatly different from that of other places. A woman's club had as its president one who lived at Monahans, a hundred miles away. Other members come from widely scattered places, the nearest of which is Fort Davis, thirty miles, but the club is a surprising success. The men of West Texas seem to have a particular aversion to formal occasions, but perhaps they do everywhere. The women who take an interest in such things are usually teachers—many of them came West to teach and married the wealthy ranchmen—or, perhaps they are college bred, and are eager for social contacts. This is largely a man's country, and it is usually women who find it harder to adjust to conditions.

Out door sports include riding and picnicing, and mountain-climbing. One must learn the right season for doing things. In the fall they say, "If you are going to do any mountain-climbing better do it before it gets too cold." Then in the spring, "Better do it before the rattlers begin to crawl out." The rocks are treacherous in the loose dry soil, and mountain-climbing does not hold so much attraction for the less rugged. No account of Alpine would be complete without mention of the annual Parent Teachers Association picnic where everybody, townspeople, public school, and college come together. The school fair, too, is another gala occasion in which the whole town takes part.

Dancing is a popular entertainment, both the modern dance, and the "old settlers dance," as they call the dance on the town square, when all, old and young, come out. For this occasion refreshments are available at almost any package store in town.

Hunting Season. One may wake up some morning in late autumn to find the little town suddenly alive with people. Men in groups jollying each other, cars parked, or cars going by in every direction. We read car numbers from Vermont, Maine, Georgia, Alabama, New York, Nebraska, Canada—from unthought of distances. Why all this? But a look around and snatches of conversation explain. Open season for hunting! It lasts for some days, and the excitement goes on, all cares left behind. Gruesome trophies of the sportsmen can be seen—one or two, or three bleeding deer strapped on cars as they drive in from a day's hunting. This is not only a gay

season, but a profitable one for the citizens of this area. Fabulous prices are paid for hunting privileges. Many wealthy people lease whole ranches.

Adaptations Made. It is evident that the people of the mountain region of Texas have come to adapt their lives to the conditions under which they live. Their occupations, their homes, their food, their clothing, their amusements, and their education show this. Eyes once accustomed to grassy lawns and shaded hillsides learn to see beauty in the ever changing colors on the purple shadowed mountains. The stars, too, shine more brightly here than in most places, and the long bright days of sunshine in winter, and the cool summers contrast favorably with the conditions often found "back east." Distances come to mean very little to these people. The characteristic western hustle is found here, and one admires the courage with which these people attack their problems.

Th scenic beauty of this region is one of its chief assets, and it will likely always remain a tourist center. In the Davis Mountain area Texas has its largest, most stupendous natural playground. Its healthful climate will continue to attract people afflicted with lung, or respiratory diseases.

Sul Ross Teachers College fills a unique place among the colleges of Texas in being located in an area particularly desirable for students who suffer with these diseases. The comparatively cool summer climate is also a drawing card for summer students of all classes. The cultural influence of this school is felt thruout the area.

FUTURE DEVELOPMENT

Because ranching will always be a leading occupation, this section can never be densely populated. The mineral sources have scarcely been touched, and they may some day become valuable. Isolation is, and will be, a hindering factor in development here, but with modern means of transportation this will become of less importance. The people of this part of Texas have realized its value as a tourist center, and have spared nothing in their efforts to develop the proposed Big Bend National Park here. This movement has given the area much favorable publicity. Whatever development may come to this section, it is, and will continue to be, Texas' most picturesque area.

PUPIL COMPREHENSION OF PLACE LOCATION DATA IN HIGH SCHOOL UNITED STATES HISTORY

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If the study of history is to become real and vital to the student, he must have some conception of the location of places mentioned in the text. It is the location of events recorded as history that frequently makes these events important. Without such knowledge of the most commonly mentioned geographical terms, much of the material included in history textbooks becomes a confused mass, largely lacking in meaning. Altho it is commonly known that pupils do have erroneous concepts as to the geographical location of historical events, it has not been definitely established to what extent this type of error occurs.

A study was carried on at the State University of Iowa in 1937 to discover to what extent students of high school United States history have mastered certain pertinent place locations in that field of content. The items to be tested were selected from lists of place locations that are usually given as being important in the study of United States history.

METHOD OF PROCEDURE

Two objective tests were used to test the knowledge of these fifty place locations: a completion recall test and a map test. In the completion recall test the item to be tested was described in part and the pupils wrote in the correct response, e.g., "The country bordering the United States on the north is ————————." The limitations of the type of completion recall item used in this study is recognized. The fact that a pupil does not recognize the partial geographical description of a place location does not signify that he does not know other pertinent geographical facts that would have enabled him to give the correct response to the item.

The map test was of two forms. In locating the rivers, states, and bodies of water the names were written on the map, thus avoiding any chance of suggesting to the pupils where the items are located. Because of the difficulty in scoring the location of cities by following such form, dots were placed on the map, each representing a city. Each dot was given an Arabic number. The pupils were instructed to write, in the parentheses to the left of the city to be

located, the number of the dot that represented that city on the map. Thirty-six dots were placed on the map, from which the pupils selected the fourteen cities listed in the test. This required discrimination on the part of the pupils in selecting the correct response.

The tests were given to 317 pupils of six high schools in the state of Iowa. Four of the high schools had enrollments between 145 and 1500, and the other two schools had enrollments of eighty and eighty-five respectively. The pupils tested in these schools were from grades eleven and twelve and were just completing one semester's work in high school United States history.

RESULTS OF THE STUDY

Table 1 gives the distribution of the pupils' scores on both tests.

TABLE I

PUPIL SCORES ON BOTH TESTS
(Possible score = 100)

Intervals	Frequencies	Intervals	Frequencies
93-97	10	48-52	26
88-92	16	43-47	22
83-87	23	38-42	12
78-82	29	33-37	11
73-77	35	28-32	18
68-72	23	23-27	6
63-67	21	18-22	7
58-62	29	13-17	0
53-57	26	8-12	3

Number of pupils tested = 317
Arithmetic Mean = 61.33
Standard Deviation = 19.80

Table 2 gives the list of the place locations used in the test and the percentage of correct responses on each of the items tested.

Four typical items that tend to show the diversity of opinion concerning place locations are given here.

1. Item No. 40. Washington, D.C.
   A city located in the District of Columbia on the Potomac River is .....

It seems reasonable to assume that nearly every pupil should know the geographic facts relative to the capital of the United States. However, twenty-six per cent of the pupils could not supply the correct response for Item No. 40, even tho the statement gives them two chances to form the correct associations. We would expect a larger percentage of the pupils to locate Washington, D.C., on the map, yet only forty-six per cent could locate the city. In attempting to locate this city the pupils confused it with Baltimore,

TABLE II

COMPARISON OF PERCENTAGES OF CORRECT RESPONSES FOR EACH ITEM ON THE COMPLETION RECALL TEST AND ON THE MAP TEST

Item No.	Completion Recall Per Cent	Map Per cent
1. Mexico	88	82
2. New York	41	74
3. Texas	79	96
4. Mississippi River	89	91
5. Potomac River	60	45
6. Canada	93	98
7. Connecticut River	8	52
8. Pennsylvania	59	81
9. Pacific Ocean	90	94
10. Virginia	34	64
11. Missouri River	66	79
12. Great Salt Lake	50	86
13. Rio Grande River	66	74
14. Gulf of Mexico	78	91
15. Columbia River	42	55
16. Iowa	68	96
17. Ohio River	56	66
18. California	86	95
19. St. Lawrence River	79	76
20. Atlantic Ocean	88	94
21. Arkansas River	14	57
22. Lake Superior	30	71
23. Hudson River	53	54
24. Massachusetts	36	69
25. Lake Erie	43	52
26. Lake Michigan	57	88
27. Delaware River	19	38
28. Lake Huron	18	47
29. Illinois River	28	71
30. Lake Ontario	18	42
31. Lake Champlain	21	49
32. Louisiana	68	68
33. Colorado River	36	58
34. Florida	64	96
35. Washington	64	82
36. Missouri	84	88
37. Baltimore	19	42
38. Charleston	49	43
39. Richmond	15	56
40. Washington, D.C.	74	46
41. Boston	67	72
42. New Orleans	64	79
43. Philadelphia	28	51
44. Savannah	29	52
45. Chicago	68	73
46. St. Louis	67	4
47. Detroit	57	48
48. Pittsburgh	41	54
49. San Francisco	64	74
50. New York City	76	61

thirty times; Seattle, Washington, twenty-six times; Richmond, Virginia, twenty-one times; Philadelphia, nineteen times; New York, sixteen times; Boston, ten times; and Pittsburgh, six times.

Other locations chosen from one to six times were, Atlanta, Omaha, Boston, Cleveland, Buffalo, Mobile, and Portland, Maine.

2. Item No. 16. Iowa
A state that is bordered on the north by Minnesota and on the east by the Mississippi River is .....

Only sixty-eight per cent of the pupils tested, all of whom live in the state of Iowa, knew that Iowa is bordered on the north by Minnesota and on the east by the Mississippi River. Thirteen pupils, or four per cent, could not locate Iowa on the map. It does not seem unreasonable to expect every junior or senior in high school to be able to locate on an outline map the state in which he lives.

3. Item No. 11. Missouri River
A river that rises in the mountains of Montana and empties into the Mississippi River at St. Louis is the .....

Two hundred ten pupils were able to give the correct response on the completion recall test for this item. Forty-three gave an incorrect response, and sixty-four omitted the item entirely. Two hundred fifty-three pupils located the Missouri River correctly on the map test. The Missouri River was confused with the Arkansas River thirteen times, with the Des Moines River five times, with the Mississippi River twenty-six times, and with the Ohio River twice, and was omitted by fifteen pupils.

4. Item No. 50. New York City
An important seaport near the mouth of the Hudson River is .....

Item No. 50 makes an interesting study. Seventy-six per cent of the pupils knew that New York is an important seaport near the mouth of the Hudson River, yet only sixty-one per cent were able to locate New York on the map. We may assume that the pupils' association of New York City with the Hudson River was more of a factor in enabling them to get the correct response than any knowledge they might have of its exact geographical location. This assumption is substantiated, in part at least, by Item No. 23, which shows that fifty-three per cent of the pupils did not know that the Hudson River is located in eastern New York, and fifty-four per cent could not locate the Hudson River on the map. Buffalo was mistaken for New York City on the map test by thirty-nine pupils.

Following are some of the concepts of geographical locations as revealed by the tests:

Canada is in the state of Nebraska; the St. Lawrence River is

along the eastern boundary of Iowa; Europe, France, and South America are in Mexico; the Great Salt Lake is in Yellowstone Park; the Hudson Bay borders Mississippi and Louisiana on the south; St. Louis is in the state of Iowa; the Gulf of Mexico is in Lower California; the United States is bordered on the north by France; the Potomac River is in Illinois, and the country of Mexico is in the United States. It is admitted that these cases are not typical, yet they occur with enough regularity to cause some concern over the apparent lack of knowledge concerning place locations.

Conclusions

After reviewing the data secured in this study it is apparent that high school pupils in United States history classes lack a mastery of important place locations. Altho only fifty pertinent place locations were used in the test, it is reasonable to assume that a similar test on other items would show similar results. This study revealed that the ability of pupils to supply the correct response to a partial geographical description of a place does not guarantee that they can locate the place accurately upon the map.

Likewise, the pupils' ability to mark a correct place location on a map does not give assurance that they can give the correct response to a geographical description of the place location.

The varied responses to the completion recall test and the scattered placing of certain location items on the map would indicate that a majority of the pupils who gave incorrect responses knew general geographical facts and locations but lacked specific knowledge about them. There was general confusion in the location of cities, lakes, rivers, and states.

It is unwise for any teacher of high school United States history to assume that pupils have a satisfactory grasp of place location facts that are considered essential to an understanding of the units to be studied. It is difficult to see how pupils can form clear concepts when their reading is handicapped by such misunderstandings of place locations. In the reading of books and daily newspapers, in the listening to radio programs, and in conversation the significance of a knowledge of place location cannot be disregarded.

TRAINING CHILDREN TO USE THEIR GEOGRAPHY TEXTBOOKS EFFICIENTLY

MARY MEIGHEN
Public Schools, Escanaba, Michigan

Our philosophy of education is often reflected in the types of tests which we use in our schools. Too often the only use made of the true-false, multiple choice, completion, and other types of tests is to check on the child's mastery of a certain number of specific facts.

The teachers in our school system have been experimenting with various types of testing during the past few years. One type of test which has been of specific help to pupils is a test which checks on the ability of pupils to use their basic geography text.

It is important that the child know how to locate material independently, for if we as teachers can stimulate intellectual curiosity on the part of the child and train him how to locate material which will satisfy this curiosity, we have started him on an educational program which may carry thru a lifetime.

The following skills can be developed in connection with the use of any good present-day geography text:

I. Interpretation of a regional map
II. Interpretation of map symbols
III. Use of population and area tables
IV. Use of map symbols
V. The ability to locate places on the map using the letters and numbers given on the map
VI. The ability to locate information in the index of a given text.
The intelligent use of the index involves several skills:
a. Location of information in index when key words are not specifically stated
b. Ability to comprehend quickly what is read
c. Ability to select and evaluate material
d. Ability to select material which is pertinent to a question
e. Ability to organize what is read
f. Ability to apply this information to the solution of the problem at hand
VII. Ability to use diacritical marks as given in the index in determining the correct pronunciation of names
VIII. Ability to read pictures
IX. Ability to read population maps, rainfall maps, growing season maps, etc.

We have found it practical to have forty or more copies of a test mimeographed and placed on file. The pupils write their answers on separate sheets of paper and thus the testing material may be used as often as it is needed.

The types of test which follow are only suggestive of the possibilities along the line of testing with the textbook open in order to train pupils to locate material quickly and efficiently. The test is not a complete unit but presents excerpts from various tests.

I. (Use of a regional map, involving the use of color key which designates natural regions)
Turn to the map on pages 10-11.
1. What type of region comprises the most of United States?
2. In what part of our country are young, rugged mountains found?
3. In what part of our country do you find the widest coastal plain?
4. In what part of our country do you find a great plateau and upland region?

II. Map on page 49. Use the symbols which indicate whether the following cities are capitals of states, lake ports, or ocean ports.
1. Norfolk
2. Cleveland
3. Charleston
4. Richmond
5. Detroit

III. Give the pages on which you will find the maps which help you to locate the following places. Give the number and letter which give the exact location. Example: Page 220 D 3
1. San Diego, California
2. Portland, Maine

IV. Area and population tables. On what pages can you find the answers to the following questions?
1. What are the three largest cities of the United States?
2. What is the area of the largest state in the union?
3. Does this state have the largest population of any state in the union?

V. Give the pages on which you located the answers to the following questions.
1. What is meant by the term forage crops?
2. What is meant by the term timber line?

VI. (Map references in the index are enclosed in parentheses.) On what pages will you find maps which will help you to locate the answers to the following questions?

1. What are the chief exports of the Middle Atlantic States?
2. What are the chief products of the eastern section of the Central States?

VII. Consult the figures in your textbook to answer the following questions.
1. Figure 59—Would this type of river be suitable for manufacturing?
2. Figure 232—Give one reason why this harbor of St. John's is a safe harbor.
3. Figure 40—What industry might be developed on a river of this type?

VIII. (Maps showing distribution of rainfall, length of growing season, and agricultural regions of the United States. Pupil will have to consult the three maps in order to make his interpretations.)
Consult the maps on pages 200 and 201.
1. What growing conditions does wheat require?
   a. Amount of rainfall
   b. Length of growing season
2. Does cotton require more rainfall or less rainfall than wheat?

IX. Answer the following questions and give the page or pages on which you found the answers.
1. Is cotton grown in any of the western states?
2. Why has Hollywood, California, become the world's greatest center for the taking of movies?

ANNUAL MEETING OF THE NATIONAL COUNCIL OF GEOGRAPHY TEACHERS

The twenty-sixth annual meeting of the National Council of Geography Teachers will be held at the University of Chicago, Wednesday, December 27, and Thursday December 28, 1939. The Hotels Windermere have been selected as hotel headquarters. The rates in Hotel Windermere east are $3.00, one person to a room, and $5.00, two persons to the room. In Hotel Windermere west, which is the older of the two hotels, rates are $2.00 single and $3.00 double. Reservations should be made at an early date.

The Association of American Geographers also holds its sessions at about the same time. These meetings offer an unusual opportunity for teachers of the Middle West who are interested in geographic education. President Reeder has organized a program which offers not only variety but excellent quality. This is not only an opportunity to attend geographical meetings but also an excellent opportunity to become acquainted with your co-workers. The following is the tentative program.

TENTATIVE PROGRAM

Wednesday, December 27, 9:30 A.M.

Greetings.

Response.

Modern Trends in Geographic Education. Erna Grassmuck Gilland, California, Pennsylvania.

The Pressure of Economics on Geography. C. E. Cooper, Ohio University, Athens, Ohio.

The Field of Geography as I See It. Edgar Bruce Wesley, University of Minnesota, Minneapolis, Minnesota.

The English Examination System and Its Influence on the Teaching of Geography. L. Dudley Stamp, London School of Economics, London, England.

Discussion.

Wednesday, December 27, 2:00 P.M.

Demonstration Lesson in Geography in the Elementary School.

Demonstration Lesson in Geography in the Secondary School.
Edith Parker, University of Chicago, Chicago, Illinois.

General Discussion, led by Professor Parker.

Executive Committee Meeting.

Wednesday, December 27, 8:00 P.M.

Illustrated Lecture on the Problem of Conservation of Natural Resources by a representative of the Wild Life Federation of America.

Director's Meeting.

Thursday, December 28, 9:30 A.M.

Section A. Elementary Schools

Making Journey Geography Real. Ferne Woodruff, Public Schools, Sullivan, Illinois.

Telling the Truth in Geography Teaching. Conrad F. Wilson, Public Schools, Harrisburg, Illinois

The Use of Current Events Materials in Geography Teaching. Zoe A. Thralls, University of Pittsburgh, Pittsburgh, Pennsylvania.

Primary Geography; Content and Teaching Methods. Thomas F. Barton, Southern Illinois State Normal University, Carbondale, Illinois.

Discussion.

Section B. Secondary Schools and Colleges

Visualizing Geography Without Films. Clare Symonds, High School, Quincy, Illinois.

Geography in the Teacher Training Colleges of England. Ina Cullom Robertson, State Teachers College, Valley City, North Dakota.

Some Interdepartmental Problems Facing Geography in the Teachers College. George T. Renner, Teachers College, Columbia University, New York City.

Discussion.

Thursday, December 28, 2:00 P.M.

Joint Meeting with the Association of American Geographers. Program arranged by the Association.

Thursday, December 28, 6:30 P.M.

Annual Dinner

Crosscurrents in the Mediterranean. Raymond E. Crist, University of Illinois, Urbana.

ANNUAL MEETING OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS

I. *Place of Meeting:* The sessions of the thirty-sixth annual meeting will be held in Rosenwald Hall on the campus of the University of Chicago, December 28, 29, 30, 1939. Accommodations, including breakfast, will be at the Judson Court, 1005 East 60th Street, Chicago. A flat rate of $10.50 per person covering room and board and banquet will be charged. People not staying in Judson Court are offered individual meal rates which are very low. Please send your reservations as soon as possible to Professor Robert S. Platt, Department of Geography, University of Chicago.

II. *Call for Titles:* Members are requested as soon as possible to submit to the Secretary titles and abstracts of papers to be presented at the thirty-sixth annual meeting.

Introduced Papers: The Council of the Association has made a new ruling regarding introduced papers. Because of the crowded nature of our program in recent years, it has been decided that graduate students in residence at a university working toward a higher degree will not be permitted a place on the program. Former students who have received their graduate training whether or not they have received advanced degrees are as before welcome to a place on the program, provided they are properly introduced. It is necessary, therefore, that members who wish to introduce such persons should follow very carefully the following instructions: The complete manuscript of the proposed paper, together with an abstract suitable for publication in the Annals, must be in the hands of the Secretary by November 20. Accompanying the manuscript and abstract, there must be a letter from a member stating the present status of the person being introduced. Since introduced papers are limited to 10 minutes, the manuscript should not exceed 5 or 6 double-spaced typewritten pages.

III. *Special Features:* Several special programs are being planned for the meetings this year. A number of persons have already agreed to contribute to these programs. In addition, any other members who have papers having to do with the topics of the special sessions will be included. The special sessions are as follows:

1. Walther Penck's Contribution to Geomorphology, directed by Prof. O. D. Von Engeln, Cornell University, Ithaca, New York; tentatively scheduled for the afternoon of Saturday, December 30.
2. The Theory of Environmentalism. Correspondence regarding this session should be addressed to the Secretary.
3. A joint session of the Association of American Geographers and the National Research Council on the Changing Political Geography of the World, with special reference to Europe. In charge of this program is Prof. Richard Hartshorne, Department of Geography, University of Minnesota, Minneapolis. This session is tentatively scheduled for the afternoon meeting of Thursday, December 28.

All sessions of the Association, excepting one evening symposium are open to members of the National Council of Geography Teachers.

PRESTON E. JAMES

EDITORIAL NOTES AND NEWS

The accompanying map (Fig. 1) presents what is believed to be a division of Poland as agreed to by Germany and U.S.S.R. The dotted line represents the approximate eastern advance of the German army. The small dotted areas south of Cracow represent areas taken from Slovakia by Poland at the time Germany occupied Czechoslovakia. We understand that these areas are being returned to Slovakia. However, since Slovakia is under complete control of Germany, the shift is little more than a gesture. According to this division, approximately 56,000 square miles and 17,700,000 inhabitants go to Germany and about 94,000 square miles together with 14,700,000 inhabitants go to U.S.S.R. To put these figures in another form it appears that Germany gets about 37% of the territory and 55% of the population and the U.S.S.R. gets 63% of the territory and about 45% of the population. The black area on the map indicates the portion assigned to U.S.S.R., while the lined area west of Warsaw goes to Germany. In addition, the government of U.S.S.R. has extended a practical domination over Lithuania, Latvia, and Estonia. It has also tremendously increased its influence in the Balkan region. Fig. 2 illustrates the complex intermingling of the racial stocks in what was formerly Poland. It is to be noted that the Poles constitute an overwhelming proportion of the population in the portion occupied by Germany. Jews, Ukrainians, White Russians, and Germans are scattered thruout the area of former Poland. The percentage of each type of racial stock in each unit area of Poland can be only conjectural since we have no exact figures.

Fig. 1

Fig. 2

The Geological Survey, Department of the Interior, recently announced the discovery of a new mineral, officially named "shortite." It was discovered in the core from an oil well in Wyoming, at depths of 1250 to 1800 feet below the earth's surface.

So carefully have the earth's minerals been classified that a new mineral is heralded as a real find. Shortite, named in honor of the geologist, Dr. Short, may become useful in glassmaking and ceramics, should it ever be found in sufficient quantities.

A new wind erosion control project is being set up by the Soil Conservation Service in Norman County, Minnesota, a part of the Red River drainage basin. The purpose of the project is to demonstrate such wind erosion control practices as improved crop rotations, field stripping at right angles to prevailing winds, soil "roughing" tillage, and tree windbreaks. The project embraces 33 farms, each about 300 acres in size, scattered over the area, which, it is hoped, will serve as a focal point for the spread of conservation practices. This county is a leading producer of small grains, hay, poultry, and potatoes.

According to a recent issue of Commerce Reports, the practically completed airport, Botwood, on the northeast coast of Newfoundland, is reported to have the longest runways in the world. Newfoundland bore one-sixth the cost of construction and the Imperial Government the remainder. This airport is utilized in the trans-Atlantic air services over the northern route between Europe and North America.

The recent visit to the Island of the King and Queen of England stimulated the local clothing trade, and brought a large influx of tourists. However, following the royalties departure the Island settled down to its principal industries, the cod fisheries and pulp wood.

GEOGRAPHICAL PUBLICATIONS

Pitkin, W. B., and Hughes, H. F., **Seeing Our Country,** Books I and II. 770 pp., more than 300 illustrations, two maps. The Macmillan Company, New York, 1939.

These two books are valuable additions to supplementary materials available for the geography of the United States. They are usable at the intermediate and junior high school level. The authors present groups of natural human youngsters taking credible trips in the course of which logical situations develop whereby the youngsters learn how America works and plays. The young travellers go by trailer, bus, automobile, train, airplane, truck and weary feet from east to west, from north to south across this land of ours. With unflagging zeal and relentless curiosity they investigate the work and play of farmers, factory workers, foresters, fishermen and many another. When the last of the travel groups has ended its happy journey a rather complete panorama of American life has been presented. Humor, suspense, and excitement are cleverly incorporated in the travel tales which are simply and clearly told. The books are sturdily and colorfully bound, the print large and the page ensemble attractive. The illustrations are numerous, striking, large and well placed.

The books are intended, according to the publishers, "for supplementing and enriching a number of curricular subjects." The geographer may deplore the emphasis on "how" America lives and the relative exclusion of reasons "why" we live as we do, he may regret that there are not more "geographic" pictures among the illustrations, he may wish for more maps, but he will find in these volumes much valuable supplementary and enrichment material.

L. C. DAVIS

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